

## 85th birthday of Professor Yakov I. Tur'yan

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With this editorial, we like to congratulate Yakov I. Tur'yan, one of the most distinguished Russian electrochemists, on the occasion of his 85th birthday. Professor Tur'yan has given an outstanding scientific contribution to electrochemistry and teaching of analytical and electroanalytical chemistry, particularly at the Department of Analytical Chemistry of Krasnodar Polytechnic Institute, Russia. Therefore, it is our great pleasure and privilege to congratulate our teacher, Professor Tur'yan, with his nice jubilee and give a short summary of his professional life.

Yakov I. Tur'yan was born on July 25, 1922 in Ukraine. He received his M.Sc. (1944) and Ph.D. (1948) degrees in electrochemical technology from the Middle-Asian Industrial

Institute of Tashkent. His doctoral studies were devoted on the investigation of oxygen overpotential in nickel anode. In 1966, he received his D.Sc. degree in electrochemistry at the Frumkin Institute of Electrochemistry, The Academy of Sciences of the USSR in Moscow for polarographic investigations of multiple step reactions. This research was done in collaboration with eminent electrochemists, Prof. A. N. Frumkin (Moscow) and Prof. J. Heyrovsky (Prague).

After graduation, Prof. Tur'yan worked as an associate professor of chemistry at Kishinev University, Moldova (1952–1958), associate professor of chemistry, head of the Analytical Laboratory at the State Institute of Nitrogenous Industry, Severodonezk, Ukraine (1958–1961), professor of chemistry, head of the Analytical Laboratory at the Yaroslavl Research Institute of Monomers, Yaroslavl, Russia (1961–1969), and Reagents professor, chair head of the Electroanalytical Laboratory at Krasnodar Polytechnic Institute, Krasnodar, Russia (1969–1991).

Prof. Tur'yan is the author of about 500 scientific papers in Russian and international journals, including 12 reviews, 61 lectures abstracts, and four monographs as follows: "Polarographic Catalymetry" (Moscow, 1998), "Redox Reactions and Potentials in Analytical Chemistry" (Moscow, 1989), "Chemical Reactions in Polarography" (Moscow, 1980), "Basic Physical–Chemical Methods for Analysis and Control of Isoprene Production" (Moscow, 1965), and 41 patents. More than a hundred papers of Prof. Tur'yan were translated from Russian chemical journals and published in the USA.

The impressive list of scientific achievements of Prof. Tur'yan includes the development of the theory of oxygen overpotential and its application for a more economical hydrogen production by electrolysis, development of the theory of electrochemical kinetic and catalytic currents and their analytical applications, development of the theory of indirect polarography and its application for the determina-

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tion of inorganic and organic compounds, development of the theory of redox-potentiometry and oxygen voltammetry and its application for the determination of antioxidants in biological, cosmetic, and food systems, development of the theory of pH-potentiometry for the determination of acidity without titration, development of microcells for voltammetry and stripping voltammetry, and other novel electroanalytical approaches, tools, and strategies.

Many novel ideas suggested by Prof. Tur'yan have been confirmed experimentally, e.g., an increase of oxygen overpotential with time as a result of the accumulation of the highest oxides in anodes; multistep carbonyl-amine equilibrium; and electrocatalytic reactions in the adsorption layer with a ligand-induced adsorption of complexes.

Upon immigration to Israel in the early 1990s, Prof. Tur'yan was accepted as a staff of The National Physical Laboratory where he continued to work very actively,

coming out with an impressive number of new publications, proposing new and exciting initiatives, and leading a number of research projects. Prof. Tur'yan has published 35 papers, one book, and obtained four patents during the last 12 years.

In 2004, Prof. Tur'yan moved to the USA based on a program for extraordinary scientists.

Prof. Tur'yan has a rare combination of qualities, including his high-level of scientific expertise and a talent to apply his findings to innovative technologies. Almost all of his theoretical works have been utilized in numerous technical applications.

In conclusion, through more than 50 years of experience in the field of analytical chemistry, physical chemistry, and electrochemistry, Prof. Tur'yan strongly supported a new generation of scientists, being a supervisor of 40 Ph.D. and four D.Sc. students.